DOCUMENT RESUME

ED 464 631 IR 021 401

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TITLE Does Personality Type Effect Online versus In-Class Course Satisfaction?

PUB DATE 2002-04-00

NOTE 13p.; In: Teaching, Learning, & Technology: The Connected Classroom. Proceedings of the Annual Mid-South Instructional Technology Conference (7th, Murfreesboro, TN, April 7-9, 2002); see IR 021 870.

AVAILABLE FROM For full text: http://www.mtsu.edu/~itconf/proceed02/index.html.

PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.

DESCRIPTORS Comparative Analysis; Computer Uses in Education; *Conventional Instruction; *Course Evaluation; *Distance Education; Higher Education; Instructional Design; *Personality Traits; Student Surveys; Web Based Instruction

IDENTIFIERS *Personality Types; *Student Satisfaction; University of South Alabama

ABSTRACT

This study sought to determine if different personality types express more or less satisfaction with courses delivered online versus those delivered in the classroom. The methodology employed two online surveys--the Keirsey Temperament Sorter (KTS) and a course satisfaction instrument. The participants were 146 college students taking online and in-class courses in the College of Education at the University of South Alabama. The four hypotheses were that Introvert, Intuition, Thinking, and Perceiving personalities express greater satisfaction than Extrovert, Sensing, Feeling, and Judging personalities. Both descriptive and inferential statistics were used in the study. (Contains 20 references.) (MES)

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Does Personality Type Effect Online Versus In-Class Course Satisfaction?

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Abstract

This study sought to determine if different personality types express more or less satisfaction with courses delivered online versus those delivered in the classroom. The methodology employed two online surveys - the Keirsey Temperament Sorter (KTS) and a course satisfaction instrument. The four hypotheses are that Introvert, Intuition, Thinking and Perceiving personalities express greater satisfaction with online courses than Extrovert, Sensing, Feeling, and Judging personalities. Both descriptive and inferential statistics were used in the study.

Paper presented at the seventh annual Mid-South Instructional Technology Conference
April 2002, Murfreesboro, TN.

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Does Personality Type Effect Online Versus In-Class Course Satisfaction?

Introduction

The study described in this paper sought to determine if different personality types express more or less satisfaction with courses delivered online versus those delivered in the classroom.

The Keirsey Temperament Sorter (KTS) is a popular instrument for the investigation of personality variables. The KTS asks the respondent to provide preferences to 70 questions. Based on responses to the 70 questions, the respondent is rated on four variables. These four variables are 1) Extroversion or Introversion (E or I), 2) Intuition or Sensing (N or S), Thinking or Feeling (T or F), and Judging or Perception (J or P). Because there are 2 possibilities for each of the four variables, there are 16 possible results on the KTS. These are: ESTJ, ISTJ, ESFJ, ISFJ, ESTP, ISTP, ESFP, ISFP, ENFJ, INFJ, ENFP, INFP, ENTJ, INTJ, ENTP, and INTP. Each of these 16 temperament groups has their own unique set of personality traits. Additional information about the KTS and the different temperaments can be found at the Keirsey Temperament Sorter and Keirsey Temperament Theory web page: http://www.keirsey.com/

There have been a number of published studies using the Myers-Briggs Temperament Indicator (MBTI) as a research instrument in a wide variety of fields. The MBTI is similar to the Keirsey Temperament Sorter (KTS) used in this study. Examples of the MBTI as a research instrument include Culp and Smith's (2001) study of how personality type affects team performance on engineering projects, Jarlstrom's (2000) research into career expectations of Finnish students, and Harris and Kumra's (2000) research into cross-cultural training for managers. Bozeman (1978) used the MBTI to study the implementation of a computer-based information system. Ballou and Brown (1987) used the Keirsey test to study burnout among college dorm assistants. Morris (2000) used the Keirsey test to study the personality traits of applicants to dental school.

The MBTI and KTS have also been used as research instruments in a number of studies related to education. Barrett (1991) compared effective teaching behaviors with teachers' personality types. Dewar and Whittington (2000) studied how students used their personality type to develop coping strategies for learning in an online environment. Cooper and Miller (1991) used the MBTI to study the relationship between personality and course performance among college business students. Cano (1999) used the MBTI to compare personality type and academic performance by college students while Borg and Shapiro (1996) used it to study achievement in an economics course. Numerous other studies (e.g., Rollins, 1990; Schroeder, 1993; Carnell & Monroe, 1993; Felder, 1993; Fish & McKeen, 1995; and Ehrman & Oxford, 1990) have used either the Myers-Briggs test or the Keirsey test to study the relationship between personality and achievement in a variety of educational settings.

The literature reviewed for this study suggests that there is a relationship between personality type and course success. While the review didn't reveal evidence of a direct

link between personality type and online or in-class course preference, we believe such a relationship exists. Based on the literature review, we began this study with the following four hypotheses:

- Students with predominately Introvert personalities will express greater preference for online courses than students with predominately Extrovert personalities
- Students with predominately Intuition personalities will express greater preference for online courses than students with predominately Sensing personalities
- Students with predominately Thinking personalities will express greater preference for online courses than students with predominately Feeling personalities
- Students with predominately Perceiving personalities will express greater preference for online courses than students with predominately Judging personalities

This study is important for three reasons. First, as colleges make increased use of online courses, it will be useful to know which personality types express greater satisfaction with online courses. Students from personality groups with low satisfaction levels may wish to avoid online courses or may require special attention. Second, instructors will be able to use this information to identify and modify areas of online courses that have low satisfaction ratings for different personality groups. Third, this study will serve as the basis for other research by the authors into the area of satisfaction with online courses.

In this paper, we will describe the methodology used in the study, provide an overview of the main results, discuss the main results in detail using both descriptive and inferential statistics, and describe the future directions of our research.

Methodology

This section describes the methodology used in the study. The section includes a discussion of participants, questionnaires, procedures, and data analysis.

Participants

The participants in this study were 146 college students taking online and in-class courses in the College of Education. Both graduate and undergraduate students were included. One hundred fourteen (78.1%) of the subjects were female while 31 (21.2%) were male. Sixty-eight (46.6%) were undergraduate students while 78 (53.4%) were graduate students. Twenty-seven (18.5%) of the students were enrolled in online courses while 119 (81.5%) were enrolled in an in-class course.

Questionnaires

The methodology for this study employed two online questionnaires. The first questionnaire was a free, web-based version of the Keirsey Temperament Sorter (KTS).

All students were asked to take the KTS and to remember the four-letter temperament code that placed them in one of the 16 categories.

The second survey was a course satisfaction instrument that we developed. The course satisfaction instrument measured students' satisfaction with aspects of the course such as interaction, feedback, amount of information, and assessment procedures. The course satisfaction instrument was accessed by the respondents via the World Wide Web. Responses to the form were sent to us via anonymous email. We used a free web-based form processing service to provide for the anonymous email.

Procedure and Data Analysis

Results of the Keirsey Temperament Sorter and responses to the course satisfaction instrument were analyzed to determine if there were any correlations between personality type and course preference. A variety of descriptive and inferential statistics were used to analyze the data. Frequency counts, graphs, and mean, mode, and median were the descriptive methods used. Correlation and analysis of variance were the inferential statistics used.

Results and Discussion

In this section, we will present the major results of this study and discuss each of them briefly. We will also include a discussion of the limitations of the study. We conclude with a brief description of future research topics that arose from this study.

Description of Temperament Variable Groups

Extrovert (E) / Introvert (I) Variable

In this study, 82 subjects (56.2%) fell into the Extrovert category, 48 subjects (33.8%) fell into the Introvert category and 12 subjects (8.5%) fell into the "X" category – representing those whose responses could not be categorized (see Figure 1).

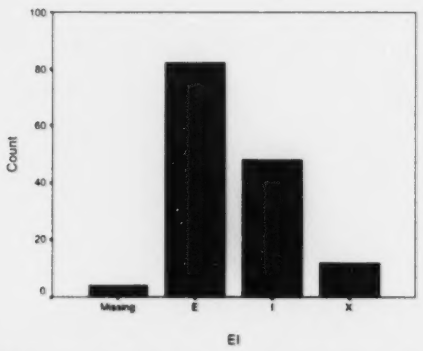

Figure 1. Bar Graph Showing the Distribution of Subjects within the Extrovert (E) / Introvert (I) Variable

Intuition (N) or Sensing (S) Variable

In this study, 46 subjects (31.5%) fell into the Intuition category, 83 subjects (56.8%) fell into the Sensing category and 14 subjects (9.6%) fell into the "X" category – representing those whose responses could not be categorized (see Figure 2).

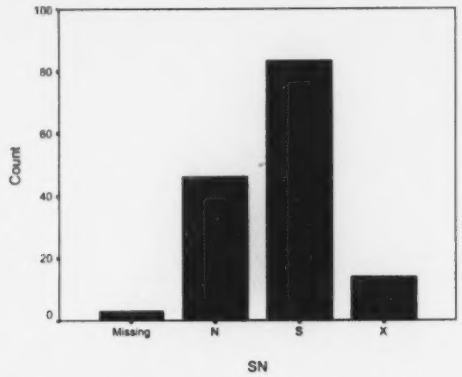

Figure 2. Bar Graph Showing the Distribution of Subjects within the Intuition (N) or Sensing (S) Variable

Thinking (T) or Feeling (F) Variable

In this study, 85 subjects (58.2%) fell into the Feeling category, 49 subjects (33.6%) fell into the Thinking category and 10 subjects (6.8%) fell into the "X" category – representing those whose responses could not be categorized (see Figure 3).

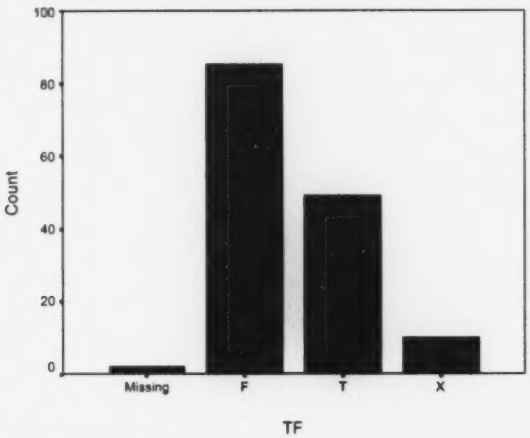

Figure 2. Bar Graph Showing the Distribution of Subjects within the Thinking (T) or Feeling (F) Variable

Judging (J) or Perception (P) Variable

In this study, 122 subjects (83.6%) fell into the Judging category, 19 subjects (13.0%) fell into the Perception category and 3 subjects (2.1%) fell into the "X" category – representing those whose responses could not be categorized (see Figure 4).

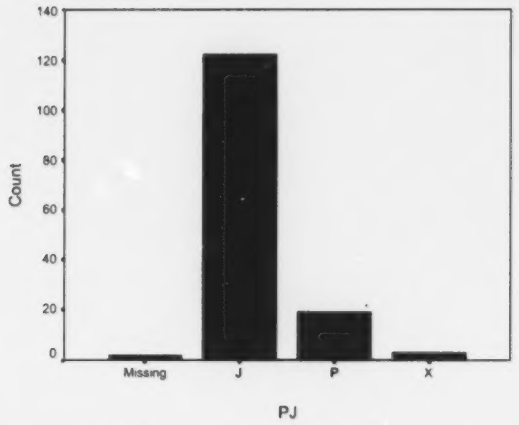

Figure 4. Bar Graph Showing the Distribution of Subjects within the Judging (J) or Perception (P) Variable

Overall Preference for Online versus In-class Courses

In order to test our four hypotheses, we compared the mean of responses related to online or in-class course preference for each of the four pairs of temperament variables. A one-way analysis of variance was used to compare the mean. Results of this analysis are shown in Table 1.

		Sum of Squares	df	Mean Square	F	Sig.
EI	Between Groups	2.605	2	1.302	3.173	.045
	Within Groups	56.643	138	.410		
	Total	59.248	140			
SN	Between Groups	.164	2	.082	.216	.806
	Within Groups	52.625	139	.379		
	Total	52.789	141			
TF	Between Groups	.609	2	.305	.775	.463
	Within Groups	55.055	140	.393		
	Total	55.664	142			
PJ	Between Groups	.465	2	.232	1.243	.292
	Within Groups	26.165	140	.187		
	Total	26.629	142			

Table 1. Overall Preference for Online versus In-class Courses for Each of the Four Pairs of Temperament Variables

As shown in Table 1, only one of the four temperament variables demonstrated statistically significant differences in their preference for online or in-class courses. There was a statistically significant different in the online versus in-class course

preference for the Introvert/Extrovert variable. The Extrovert group had a mean response of 1.96 while the Introvert group had a mean response of 2.28. A lower mean represents a stronger preference for online courses. Descriptive statistics for the Extrovert / Introvert group on this question are shown in Table 2.

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
E	82	**1.96**	.618	.068	1.83	2.10
I	47	**2.28**	.540	.079	2.12	2.44
X	12	**2.17**	.577	.167	1.80	2.53
Total	141	2.09	.603	.051	1.98	2.19

Table 2. Descriptive Data for Online versus In-class Courses for Temperament Variable Introvert or Extrovert.

We used items on the course satisfaction survey to compare the Extrovert group and the Introvert group on ten different course satisfaction factors. Course satisfaction factors included interaction with the instructor, interaction with other students, and amount of information presented in the course. We found two statistically significant differences between the Extroverts and the Introverts among the 10 course satisfaction factors. The two groups differed on the their satisfaction in the way they were evaluated and in their preference for the way information was presented in their courses. Unfortunately, since some of the subjects were in online courses and some were in-class courses, it's impossible to draw any conclusions about this result other than it provides general support to the theory that Extroverts and Introverts differ in their learning style preferences.

We also compared the other three temperament groups on each of the 10 course satisfaction factors. We found the following results:

1) There was a statistically significant difference between the preferences of the Intuition (N) group and those of the Sensing (S) group for the type of information presented in the course. The Intuition group expressed stronger preferences in the type of information presented than the Sensing group
2) There were no statistically significant differences found between the Thinking (T) group and the Feeling (F) group on any of the ten factors tested.
3) There was a statistically significant difference between the preferences of the Judging (J) group and those of the Perception (P) group for the amount of student interaction in the course. The Perception group expressed stronger preferences for the amount of student interaction than the Judging group.

While these finding are interesting, we have to avoid placing too much importance on them. As with the Extrovert / Introvert variable, some of the subjects were in online courses and some were in-class courses. As a result, it's impossible to draw any

conclusions about these results other than they provide general support to the theory that differences exist in their learning style preferences of the various temperament groups.

We also compared the responses of students who were taking online courses and students who were taking in-class courses on each of the 10 course satisfaction factors. One statistically significant result was found. Online students and in-class students differed in their satisfaction with the amount of interaction with other students. Students in the in-class courses expressed much stronger satisfaction with student interaction than did students who were in the online courses.

Finally, we compared preference for online versus in-class courses by gender. The analysis showed that there was no statistically significant difference in the preferences for online or in-class courses by gender. The mean preference response for females (2.1) and for males (2.0) in this study were virtually identical.

Limitations of the Study

There were three major limitations of this study. First, there were not an equal number of online and in-class subjects in this study. Eighty-two percent of the subjects in this study were from in-class courses. Second, subjects in this study were from different courses. Ideally, subjects should come from online and in-class sections of the same course – preferably taught by the same instructor. Third, both undergraduate and graduate students were included in this study. Future studies should include only graduate or undergraduate students.

Areas of Future Research

The results of this study suggest several questions that might be examined by future research. Future research in this area should concentrate on defining specific variables in online instruction. We found that the generic construct of "preference" for online or in-class courses was too vague. Future researchers should look at specific aspects of online courses such as feedback from the instructor, interaction with other students, and assignment workload.

There have been very few on-going, longitudinal studies related to this area. The literature would benefit from a large-scale, long-term study that investigated the relationship between temperament variables and learning in an online environment.

Conclusion

In this section we will discuss our finding in relation to each of the four hypotheses we developed at the beginning of our study. We will also discuss other main findings of the study that don't relate directly to the hypotheses.

Hypotheses

Hypothesis One

Students with predominately Introvert personalities will express greater preference for online courses than students with predominately Extrovert personalities

This study resulted in a statistically significant difference between the preference for online courses between Introvert personalities and Extrovert personalities. However, the findings of this study were exactly opposite of what we had hypothesized. Extroverts in our sample expressed stronger preference for online courses than did Introverts. This is an interesting and counter intuitive finding. More research is needed to determine if this finding was unique to this study or if it can be generalized to a wider population.

Hypothesis Two

Students with predominately Intuition personalities will express greater preference for online courses than students with predominately Sensing personalities

The results of this study suggest no statistically significant difference in the preference for online courses between students with predominately Intuition personalities and those with predominately Sensing personalities.

Hypothesis Three

Students with predominately Thinking personalities will express greater preference for online courses than students with predominately Feeling personalities

The results of this study suggest no statistically significant difference in the preference for online courses between students with predominately Thinking personalities and those with predominately Feeling personalities.

Hypothesis Four

Students with predominately Perceiving personalities will express greater preference for online courses than students with predominately Judging personalities

The results of this study suggest no statistically significant difference in the preference for online courses between students with predominately Perceiving personalities and those with predominately Judging personalities.

Other Main Findings of the Study

There were six other main findings of this study.

1) There were statistically significant differences in the responses to certain course satisfaction variables among those in the Extrovert / Introvert temperament group.
2) There were statistically significant differences in the responses to certain course satisfaction variables among those in the Intuition / Sensing temperament group.
3) There were no statistically significant differences in the responses to any course satisfaction variables among those in the Thinking / Feeling temperament group.

4) There were statistically significant differences in the responses to certain course satisfaction variables among those in the Perceiving / Judging temperament group.
5) There was a statistically significant difference in satisfaction with student interaction between students taking online courses and those taking in-class courses. Students taking in-class courses had greater satisfaction with their level of student interaction than students in online courses.
6) There was no statistically significant difference related to gender in the preference for online or in-class courses. Females and males in this study expressed nearly identical levels of preference for online or in-class course.

Recommendations

Based on the findings of this study, we have developed three recommendations. First, instructors teaching online courses should consider the personality types of students in their courses. Instructors should, at a minimum, be aware that different personality types are present in their courses and try to account for those personality types.

Our second recommendation is that online instructors should provide a variety of ways for students to interact with each other in their courses. Methods for increasing student interaction could include group projects or assignment, "students only" discussion areas, communication via electronic mail or telephone, and face-to-face interactions when possible.

Our third recommendation is that more research be done in this area. Our study provided enough evidence to suggest that temperament variables play an important role in course preference. More research in this area could lead to a greater understanding of why certain students prefer online or in-class courses. The ultimate goal of such research would be to create online learning environments that are effective learning tools for all students.

Authors' Notes:

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The authors would like to thank Rosalie Ward for her contributions to this study.

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